control means coupled to said read means and said decoding

means for starting reading of pixel data of a first field of a

A3

Concl

frame to be displayed with a time difference required for reading

pixel data of one field from said storage means in response to

20   starting of the decoding processing on the first field in said

decoding means[.]

said control means includes means for starting a decoding

operation of a first field of a subsequent frame in response to

starting of reading of pixel data of the last field of the decoded

25   and stored frame to the display unit.

Claim 22, line 7, delete "further".

REMARKS

In response to the Office Action dated January 23, 1997,

claims 1, 8, 21 and 22 are amended. Claims 1-3, 8-10, 14, 16 17

and 21-23 are now active in this application. Care has been

exercised to avoid the introduction of new matter.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 112

Claims 1-3, 8-10, 14, 16, 17 and 21-23, pending in this

application, stand rejected under 35 U.S.C. § 112, second

paragraph, as being indefinite. The Examiner contends that the

claims are not directed to the elected invention (embodiment 2)

because the "metes and bounds of the claims cannot be readily ascertained". The rejection is respectfully traversed.

Case law precedent has established that an analysis under 35 U.S.C. § 112 begins with a determination of whether the claims do, in fact, set out and circumscribe a particular area with a reasonable degree of precision and particularity. Claim language is viewed not in a vacuum, but in light of the teachings of the prior art and of the application disclosure as it would be interpreted by one possessing the ordinary level of skill in the art. *In re Johnson*, 558 F.2d 1008, 194 USPQ 187 (CCPA 1977); *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971).

A decision on whether a claim is invalid under this section of the statute requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification, *Seattle Box Co. v Industrial Crating & Packing*, 731 F.2d 381, 385, 221 U.S.P.Q. 568, 574 (Fed. Cir. 1984).

Applicants do not understand what the Examiner intends by the rejection since he readily identifies the corresponding portion of the specification which describes the portions of the claims (actually the independent claims) which he objects to. Thus, the claims are definite.

Embodiment 2 is directed to the delay of one field and one macro block line for the starting of decoding a subsequent B picture.

Claim 1 requires substantially one field time difference between the decoding start timing and the reading out for B picture. Applicants believe the substantially one field time covers the one macro block line delay and that claim 1 covers embodiments 1 and 2.

no

It is presumed that the actual basis for the rejection is that the Examiner cannot read all the claims only on the second embodiment. However, nothing in the second embodiment, directed to the delay of one field and one macro block line for the starting of decoding a subsequent B picture, prevents it from being applicable to each of independent claims 1, 8, 14 and 21. If the embodiment is a picture decoding and display unit having such delay means, then the current claims are all readable on FIGS. 11-15 even though independent claims 1, 8, 14 and 21 do not require the delay means and can read on other embodiments.

True

There is nothing wrong with having independent claims broader in scope than the elected embodiment as long as each is readable thereon (generic thereto).

Claim 2 clearly requires the delay of one macro block line, and claims 2 and 3 are directed to the embodiment 2. Applicants believe the Examiner misinterprets claim 1 as being directed to only the embodiment 1 because claim 2 recites that the control means "further includes" delay means. To expedite prosecution,

claim 2 is amended to recite that the control means "includes" delay means.

Claim 14 first requires the starting of decoding a next frame in response to reading of a last display field in a preceding frame. This scheme is read on the embodiment 2. Claim 14 also requires the re-reading of a field every predetermined number of frames. Thus, Applicants believe claim 14 further restricts the concept of embodiment 2.

The concept of the present invention is the time difference between the start of decoding a frame and the start of reading a frame. Under such inventive concept, each embodiment is developed. Embodiment 2 includes numerous significant limitations. The 3:2 pull-down conversion of claim 14 is naturally developed from embodiment 2 and should be regarded as a modification of embodiment 2.

Claim 21 requires the one field time difference between the start of decoding a first field of a frame and the start of reading a first field of another frame. Claim 21 is not restricted to precisely one field time difference. Thus, claims 21-24 can read on embodiment 2.

Applicants do not understand why the Examiner tries to restrict the claims to only one specific embodiment. A claim is allowed to cover a plurality of embodiments in a generic form. More specifically, Applicants are entitled to recite claims

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readable on the elected embodiment even though the claims may be generic claims (readable on more than one species) and of different scope from each other.

As noted above, the pivotal issue generated by a rejection under the second paragraph of 35 U.S.C. § 112 is whether one having ordinary skill in the art, with the supporting specification in hand, would be able to ascertain the scope of the claims with reasonable precision. *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971); *In re Hammack*, 427 F.2d 1378, 166 USPQ 204 (CCPA 1970). It should be emphasized that unpatented claims are reasonably construed in light of the supporting specification. *In re Okuzawa*, 537 F.2d 545, 190 USPQ 464 (CCPA 1976); *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, reasonable precision is all that is required. See, for example, *U.S. v. Telectronics Inc.*, 857 F.2d 778, 8 USPQ2d 1217; *Hybritech, Inc, v. Monoclonal Antiobodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986); *In re Kroekel*, 504 F.2d 1143, 183 USPQ 610 (CCPA 1974).

With the above legal precedents in mind, Applicant respectfully submits that an artisan, armed with the supporting specification, would not have been confused as to the scope of claims 5-7 when read in light of the disclosure.

Based on the foregoing, it is respectfully submitted that the claims 1-3, 8-10, 14, 16, 17 and 21-23, as amended, recite the subject matter of the invention with the required degree of

particularity and that the rejection under the second paragraph of 35 U.S.C. § 112 should be withdrawn.

It should be noted that claims 1 and 21 are amended to add the recitation that the control means includes means for starting a decoding operation of a first field of a subsequent frame in response to starting of reading of pixel data of the last field of the decoded and stored frame to the display unit.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 102

Claims 8-10 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Auld. The Examiner contends that each of the elements recited in claims 8-10 are disclosed in the reference.

Auld discloses a pipelining of decoding (reconstructing) and reading of pixel data. In FIG. 5 of Auld, display of each picture is started with a delay of one field period to the start of decoding of said each picture. For example, P1 is reconstructed from the time T0, and is displayed from the time T1. This time difference relationship holds for every picture.

In the present invention, such time difference relationship holds for only B pictures. For example, in FIG. 4 of the present invention, I3 picture is decoded during the periods T1 and T2, and the decoded I3 picture is stored during the periods T3-T7 and then transferred for display during the period T8.

In addition, Auld describes on col. 14, line 2 that after approximately 70 - 75% of a picture has been reconstructed, the display controller 32 begins reading and processing data for the picture from the picture storage. That is, Auld reads the pixel data of a picture in response to decoding of pixel data of the picture.

In the present invention, the decoding is performed in response to the reading of pixel data of a last field to be displayed. Thus, the response relationship is quite different between the present invention and Auld.

To expedite prosecution, claim 8 is amended to recite that the subsequent frame is a frame applied subsequently to a frame having a decoding process thereon completed upon reading of the last field to be displayed. This requires that I/P pictures are not overlapped in decoding and reading operation thereof.

Thus, claim 8-10, as amended is patentable over Auld and allowance thereof is respectfully solicited.

CONCLUSION

Accordingly, it is urged that the application, as now amended, overcomes the rejection of record and is in condition for allowance and favorable reconsideration of this application, as amended, is respectfully requested. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment,
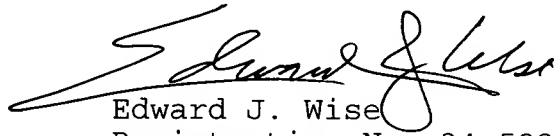
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Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 12-2237 and please credit any excess fees to such deposit account.

Respectfully submitted,

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